portion 12 and the replaceable printing component(s) 14 together cooperate to accomplish printing on print media. Each replaceable printing component 14 includes a linking device (not shown) for exchanging information between the printer portion 12 and the replaceable printing component 14. The use of the linking device 34 (Figure 2), together with a corresponding linking device (not shown) associated with the printer portion 12, allows the printer portion 12 to retrieve information and monitor status of the replaceable printing components 14.

Please replace the paragraph beginning at page 4, line 1, with the following rewritten paragraph:

In one exemplary embodiment, the printing system 10 is an inkjet printing system. In this exemplary embodiment, the replaceable printing component 14 is an ink reservoir that is in fluid communication with an inkjet printhead portion that will be discussed with respect to Fig. 2. Each of the replaceable printing components 14 or ink reservoirs is installed in a scanning carriage 18 that is moved relative to print media. The inkjet printer portion 12 includes a media tray 20 for receiving print media 22. As media step through a print zone, the scanning carriage 18 moves the replaceable printing components 14 and printheads relative to the print media 22. The printer portion 12 selectively activates the printhead portion associated with the replaceable printing components 14 to deposit ink on print media 22 to thereby accomplish printing.

Please replace the paragraph beginning at page 5, line 9, with the following rewritten paragraph:

Fig. 2 is a simplified schematic representation of the inkjet printing system 10 of the preferred embodiment shown in Fig. 1. In this simplified representation, the replaceable printing component 14 is shown as having two separately replaceable parts, a reservoir portion 24 and a printhead portion 26. The printing system 10 includes a controller 28 for providing activation signals to the printhead 26. The printhead 26 ejects a marking fluid such as ink in response to activation by the controller 28. The reservoir 24 is an ink reservoir that

A4 (Contd)

is used to replenish the printhead 26 with ink by way of a fluid conduit 30. The fluid conduit 30 fluidically couples the ink reservoir 24 with the printhead portion 26.

Please replace the paragraph beginning at page 6, line 11, with the following rewritten paragraph:

The linking device 34 is configured to pass information through sidewalls of the reservoir 32 to exchange information between the ink reservoir 24 and controller 28 on the printer portion 12. The exchange of information between the ink reservoir 24 and the printer portion 12 is to ensure the operation of the printer portion 12 is compatible with the ink contained within the replaceable printing component 14 thereby achieving high print quality and reliable operation of the printing system 10.

Please replace the paragraph beginning at page 6, line 17, with the following rewritten paragraph:

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The controller 28, among other things, controls the transfer of information between the printer portion 12 and the replaceable printing component 14. In addition, the controller 28 controls the transfer of information between the printhead 26 and the controller 28 for activating the printhead 26 to selectively deposit ink on print media. The controller 28 also controls the relative movement of the printhead 26 and print media. The controller 28 performs additional functions such as controlling the transfer of information between the printing system 10 and a host device such as a host computer (not shown).

Please replace the paragraph beginning at page 6, line 25, with the following rewritten paragraph:

In order to ensure reliable operation of the printing system 10 it is necessary to identify when the replaceable consumable 14 is out of ink so that operation of the printhead 26 can be halted. Operation of the printhead 26 without ink can result in catastrophic damage to the printhead 26. Information provided by the linking device 34 to the controller 28 allows the controller 28 to identify an out of ink condition so that operation of the printhead 26 can be ceased.

Please replace the paragraph beginning at page 7, line 1, with the following rewritten paragraph:

In addition to out of ink information, the linking device 34 provides various ink characteristics to the controller 28 for determining accuracy of the out of ink information. For example, the linking device 34 associated with the replaceable consumable 14 can provide characteristics such as ink resistivity and ink capacitance just to name a couple. The controller 28 can use this information to identify the ink composition. In the event the ink composition is recognized then the sensor information for determining the out of ink condition will be accurate. Conversely, in the event that the ink composition is not recognized then the sensor information for determining the out of ink condition will not be accurate and other measures are required for preventing damage to the printheads 26.

Please replace the paragraph beginning at page 7, line 17, with the following rewritten paragraph:

In one exemplary embodiment, the antenna portion 40 is configured so that when activated, signals are emanated of a wavelength selected to pass through sidewalls 32 of the ink reservoir 24. The antenna portion 40 is achieved by forming several turns of a conductor to create a radio frequency antenna portion 40. This radio frequency antenna 40 utilizes a frequency that is capable of penetrating through the sidewall 32 of the ink reservoir 24 to the controller 28.

Please replace the paragraph beginning at page 8, line 5, with the following rewritten paragraph:

Because sensed parameters such as conductivity and capacitance can change as a result of different ink compositions it is necessary to verify that the ink composition has not changed to ensure accuracy of the out of ink signal. By measuring parameters such as ink capacitance in conjunction with ink conductivity, the particular ink composition within the ink reservoir 24 can be characterized to determine if the ink composition is the same as what

the out of ink sensing system was designed for and therefore whether the out of ink signal is accurate.

Please replace the paragraph beginning at page 8, line 12, with the following rewritten paragraph:

In contrast, if the ink composition is different from the ink composition the out of ink sensing system was designed for, then an out of ink signal may not be generated or, if the out of ink signal is generated, this signal may be erroneous. Once it is determined the out of ink sensing system no longer has integrity, then the printing system 10 can initiate action to protect the printhead 26 from damage. For example, the printer can notify the customer that the out of ink sensing system has lost integrity and require the customer to verify there is sufficient ink in the ink reservoir 24 before resuming the printing process.

Please replace the paragraph beginning at page 8, line 20, with the following rewritten paragraph:

Fig. 4 is a cross-section of the linking device 34 taken across lines 4-4 in Fig. 3. The linking device 34 is shown encapsulated by an encapsulant 44 to prevent ink from getting access to the electrical circuit portion 38 and the antenna 40. Ink used in an inkjet printing tends to include surfactants that if exposed to the electrical circuit portion 38 can cause damage. In addition, ink is conductive and therefore tends to provide unwanted electrical shorts in the electrical circuit portion 38. The encapsulant 44 is configured to prevent ink access to the electrical circuit portion 38.

Please replace the paragraph beginning at page 8, line 27, with the following rewritten paragraph:

The use of the encapsulant 44 allows the linking device 34 to be disposed in the ink reservoir 24 whereby ink parameters can be measured directly by the sensors 42. Because the linking device 34 is coupled through the sidewalls 32 of the ink reservoir 24, electrical conductors passing through sidewalls 32 are not required. By eliminating routing of electrical conductors through the sidewalls 32 of the ink reservoir 24 the reliability of the ink

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reservoir 24 tends to be increased and the cost of the ink reservoir 24 tends to be reduced. In the exemplary embodiment, the ink encapsulant 44 is a plastic carrier.

Please replace the paragraph beginning at page 11, line 6, with the following rewritten paragraph:

The measurement device 70 receives electrical signals from the sensor 42 indicative of ink parameter information as well as indicative of an out of ink condition within the ink reservoir 32. In addition, the measurement device 70 receives control information from the sense controller 74 indicating what type of measurement is requested. The measurement device provides a measurement value indicative of the measured parameter to the comparator 72.

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Please replace the paragraph beginning at page 11, line 12, with the following rewritten paragraph:

The measurement device 70 is capable of making a variety of different types of measurements. One type of measurement the measurement device 70 is configured to make is to measure resistance or conductivity between the sensors 42. Another type of measurement the measurement device is capable of is measurement of capacitance between the sensors 42. The printer portion 12 makes use of this measured information in a variety of ways, such as, for determining ink level information and for determining ink type, to name a couple of uses. A variety of other measurements can also be made by the measurement device that are suitable for characterizing ink within the ink reservoir 34.

Please replace the paragraph beginning at page 11, line 21, with the following rewritten paragraph:

The comparator 72 compares the measured value provided by the measurement device 70 to a reference value provided by the sense controller 74. The reference value is provided by the serial controller 56 or is generated by the sense controller 74. The reference value, in general, will be different for each parameter measured. For example, the reference value will be a first value for measuring conductance for determining an absence of ink

between the sensors 42. The reference value will be a second value for measuring capacitance between the sensors for determining ink type in the ink reservoir 24.

Please replace the paragraph beginning at page 11, line 29, with the following rewritten paragraph:

Characterizing the ink within the ink reservoir 24 allows the printer portion 12 to determine if ink within the reservoir 24 has the same parameters as ink the sensor 42 and sensor electronics 66 were designed to sense. In the event that the ink within the ink reservoir 24 has been replaced with a different ink with different ink parameters, then the integrity of the out of ink sensing system and the customer must be notified to avoid damaging the printheads.

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Please replace the paragraph beginning at page 12, line 5, with the following rewritten paragraph:

In the exemplary embodiment, each of the linking device 34, sensor electronics 66 and the electrical storage device 64 is either an active device powered by a battery or a passive device that stores energy in a storage device such as a capacitor. In the case of a passive device, energy is provided to the capacitor by voltages induced on the antenna 60. In the exemplary embodiment, voltages are induced on the antenna 60 due to time varying voltages that are applied to the antenna 52 by the radio frequency interface 50. The induced voltage at the antenna 60 is provided to a power conditioner 62 which converts these time varying voltages into a single polarity voltage that is suitable as a supply voltage for each of the electrical storage device 64, the serial controller 56, the radio frequency interface 58 and sensor electronics 66. In one exemplary embodiment, the power conditioner 62 rectifies a time varying voltage that is induced on the antenna 60 and filters this rectified voltage to provide a suitable supply voltage.

Please replace the paragraph beginning at page 12, line 28, with the following rewritten paragraph: